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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/823,079	03/30/2001	Errol C. Heiman	STL9524	6981
27365 7590 11/26/2007 SEAGATE TECHNOLOGY LLC C/O WESTMAN CHAMPLIN & KELLY, P.A. SUITE 1400 900 SECOND AVENUE SOUTH MINNEAPOLIS, MN 55402-3319			EXAMINER LEROUX, ETIENNE PIERRE	
			ART UNIT 2161	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/823,079

Applicant(s)

HEIMAN ET AL.

Examiner

Etienne P LeRoux

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-21, 23-31 and 33-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-21, 23-31 and 33-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Claim Status:

Claims 18-21, 23-31 and 33-36 are pending; claims 1-17, 22, 32 and 37 have been canceled. Claims 18-21, 23-31 and 33-36 are rejected as detailed below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18-20, 24-30 and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat No 5,712,553 (Hallberg) in view of US Pat No 5,970,074 issued to Ehiro (hereafter Ehiro) and further in view of US Pat No 5,343,083 (Fuse), hereafter Fuse.

Claims 18 and 28:

Hallberg discloses:

a multi-voltage power source having a first voltage output, which is capable of supplying a plurality of selectable voltage level for a constant power supply voltage at a nominal power supply voltage of an electronic device [second voltage and third voltage supplied from subgroups of the first group that includes at least one battery, col 11, lines 1-15]

Hallberg discloses the elements of the claimed invention as noted above but does not disclose circuitry configured to introduce controllable disturbances into the constant power supply voltage. Ehiro discloses circuitry configured to introduce controllable disturbances into the

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constant power supply voltage [Figs 1, 4 and 5, col 7, lines 10-50]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hallberg to include circuitry configured to introduce controllable disturbances into the constant power supply voltage as taught by Ehiro for the purpose of measuring the threshold characteristic of a semiconductor integrated circuit [col 2, lines 15-20].

The combination of Hallberg and Ehiro discloses the elements of the claimed invention]as noted above and furthermore discloses an additional power source having a second voltage output, which is capable of supplying an additional voltage level that is different from the plurality of selectable voltage levels [Hallberg, first voltage, greater differentials between the voltage levels and at least three voltages are possible, col 11, lines 1-15]

Claims 19 and 29:

The combination of Hallberg, Ehiro and Fuse discloses the elements of the claimed invention as noted above and further Ehiro discloses wherein the disturbance is a rising pulse having a maximum voltage which is controllable [Fig 4, col 7, lines 10-20, alternatively, Test Step in Fig 5 can be interpreted as comprising a negative step pulse and a positive step pulse]

Claims 20 and 30:

The combination of Hallberg, Ehiro and Fuse discloses the elements of the claimed invention as noted above and further Ehiro discloses wherein the disturbance is a low-going pulse having a minimum voltage being less than the nominal power supply voltage [Fig 5]

Claims 24 and 34:

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The combination of Hallberg, Ehiro and Fuse discloses the elements of the claimed invention as noted above and further Ehiro discloses a manually operated user interface used to control the disturbances [col 6, lines 35-45]

Claims 25 and 36:

The combination of Hallberg, Ehiro and Fuse discloses the elements of the claimed invention as noted above and further Ehiro discloses wherein the disturbance is a plurality of pulses and a frequency and a number of pulses in the plurality of pulses are controllable [, col 6, lines 35-45, Fig 5]

Claim 26 and 35:

The combination of Hallberg, Ehiro and Fuse discloses the elements of the claimed invention as noted above and further Ehiro discloses wherein the disturbance is at least one pulse having a duration and a magnitude which are controllable [Fig 5]

Claim 27:

The combination of Hallberg, Ehiro and Fuse discloses the elements of the claimed invention as noted above and further Ehiro discloses wherein the disturbance comprises a voltage sequence applied during powering up of the electronic device [Fig 5]

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 21 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hallberg, Ehiro and Fuse and further in view of US Pat No 5,386,183 (Cronvich), hereafter Cronvich.

Claim 21 and 31:

The combination of Hallberg, Ehiro and Fuse discloses the elements of claims 18/28 as noted above but does not disclose wherein the constant power supply voltage is selected from the group of voltages consisting of +5 VDC and +12 VDC. Cronvich discloses wherein the constant power supply voltage is selected from the group of voltages consisting of +5 VDC and +12 VDC [Fig 3 and col 12, lines 23-26]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify then above combination of references to include wherein the constant power supply voltage is selected from the group of voltages consisting of +5 VDC and +12 VDC as taught by Cronvich for the purpose of providing a power source suitable for many microcomputer and logic circuits [col 12, lines 23-26].

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Claims 23 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hallberg, Ehiro and Fuse and further in view of US Pat No 4,764,652 (Lee et al), hereafter Lee.

Claims 23 and 33:

The combination of Hallberg, Ehiro and Fuse discloses the elements of claims 18 and 22/28 and 32 as noted above but does not disclose wherein the additional voltage is +24VDC. Lee discloses +24VDC [col 1, lines 55-60]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above combination of references to include wherein the additional voltage is +24VDC as taught by Lee for the purpose of including a power supply voltage that is used for telecommunications equipment [col 1, lines 55-60].

Response to Arguments

Applicant's arguments filed 6/21/2007 have been carefully considered but are not persuasive for the following reasons.

Applicant Argues:

Applicant states in the second paragraph of page 2 "The above language of Hallberg describes only a single power supply (or single power source) having a number of selectable voltage levels. The entire Hallberg reference includes nothing about two different power sources such as he "multi-voltage power source" and the additional power source" which are included in claim 1."

Examiner Responds:

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Examiner is not persuaded. According to the Supreme Court, the TSM test is one of a number of valid rationales that could be used to determine obviousness. It is not the only rationale that may be relied upon to support a conclusion of obviousness. *KSR International Co. v. Teleflex Inc.*

As clearly outlined in above Office action, one of ordinary skill in the art would have been motivated to combine Hallberg and Ehiro for the purpose of providing a plurality of voltage levels for powering electronic circuits. Specifically claim 1 includes “an additional power source having a second voltage output which is capable of supplying an additional voltage level that is different from the plurality of selectable voltage levels.”

Examiner maintains providing a power source which includes the correct supply voltage is well-known and expected in the art. Batteries which are commercially available are obtainable with a plurality of supply voltages because of the need to provide the correct voltage to power a particular electronic device.

Hallberg discloses in column 11, line 13, supplying at least three different voltage levels. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the disclosure of Hallberg to include an additional power source in order to obtain a voltage level which is “different from” (exact claim language) the three selectable voltage levels disclosed by Hallberg in column 11, line 13.

Clearly, one of ordinary skill in the art would have been motivated to combine Hallberg and Ehiro for exactly the reason claimed in claim 1, i.e., “an additional power source having a second voltage output which is capable of supplying an additional voltage level that is different

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from the plurality of selectable voltage levels.” Examiner maintains that the rejection under 35 U.S.C. § 103 (a) is proper because any arguable difference(s) between the subject matter sought to be patented and the prior art is/are such that the subject matter as a whole i.e., one or more power supplies comprising one or more selectable voltages would have been obvious to one of ordinary skill in the art.

Applicant Argues:

Applicant states in the third paragraph of page 2 “Hallberg does not disclose circuitry to introduce controllable disturbances into a constant power supply voltage (from the multi-voltage power supply).”

Examiner Responds:

Examiner is not persuaded. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies [i.e., a constant power supply voltage (from the multi-voltage power supply)] are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant Argues:

Applicant states in the third paragraph of page 2 “In fact, Hallberg makes no suggestion of that feature. As a result, the Office action relies on Ehiro (citing FIGS. 1, 4 and 5, column 7, lines 10-50, column 2, lines 15-20).”

Examiner Responds:

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Examiner is not persuaded. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Furthermore, according to the Supreme Court, the TSM test is one of a number of valid rationales that could be used to determine obviousness. It is not the only rationale that may be relied upon to support a conclusion of obviousness. *KSR International Co. v. Teleflex Inc.*

Applicant Argues:

Applicant states in the fourth paragraph of page 2 “However, in Ehiro, VDD is the power supply voltage applied to the device under test (DUT) 21. In contrast, any test signals or waveforms are introduced into a signal input of DUT 21, which is different from its power supply connection and do not introduce disruptions to its power supply voltage VDD (See column 6, lines 16-56 of Ehiro). Thus the statements in the Office Action regarding Ehiro are incorrect.”

Examiner Responds:

Examiner is not persuaded. The above statement by Applicant is incomprehensible for the following reasons. The following are unclear:

- (1) How VDD relates to the claim language.
- (2) What comprises “in contrast.”
- (3) What comprises any test signals or waveforms
- (4) Signal output of DUT 21
- (5) Which is different from its power supply connection

The claim language “circuitry configured to introduce controllable disturbances into the constant power supply voltage” is considered below.

Ehiro clearly, in FIG 5 shows voltage disturbances introduced into a constant supply voltage of 5.00 V. Ehiro discloses the following in column 7, lines 30-50:

FIG. 5 shows a signal waveform in the function test 2 at step a20 in FIG. 3. The clock signal fed as an input signal to the DUT 2 is a repeating signal decreasing in peak voltage to 0.00 V side at every step by 0.01 V, with a reference voltage of 5.00 V. In the range where the peak voltage exceeds the threshold VTH2, state transition of the Schmitt circuit 21 does not take place, and the current flowing in the DUT 2 hardly changes, and the input signal detected by the resistance 41 and fed to the set input terminal S of the latch circuit 46 is hardly changed. At test step M+1 where the peak voltage of the clock signal is smaller than the threshold VTH2, a large power source current flows due to state transition of the Schmitt circuit 21, and the input signal detected by the resistance 41 and fed to the set input terminal S of the latch circuit 46 comes to exceed the input inversion level of the latch circuit 46. As a result, after test step M+1, the output of the latch circuit 46 is changed from the state of low level reset in the initial setting to the state of high level. The output level of the latch circuit 46 is detected by the control circuit 16 in the comparator 15 at the test timing shown in FIG. 5.

Examiner maintains that above disclosure by Ehiro clearly reads on claim limitation “circuitry configured to introduce controllable disturbances into the constant power supply voltage.”

Applicant Argues:

Applicant states in the paragraph joining pages 4 and 5 “Applicants further note that, even if Hallberg were to disclose a multi-voltage power source and an additional power source of the type featured by claim 1, combining Hallberg with Ehiro would not provide a power tester that is capable of introducing controllable disturbances into a constant power supply voltage. Rather, test signals would be introduced to a signal input of a DUT.

Examiner Responds:

Examiner is not persuaded. Ehiro discloses in column 7, lines 50-55, discloses that VDD = 5.00V. Furthermore, one of ordinary skill in the art would have readily recognized that the

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“reference voltage of 5.00 V” as disclosed in column 7, lines 30-50 and in FIG 5 is in fact VDD = 5.00 V as disclosed in column 7, lines 50-55.

Examiner has correctly mapped the disclosure of the combination of Hallberg and Ehiro to the claim limitation “circuitry configured to introduce controllable disturbances into the constant power supply voltage.”

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Etienne P LeRoux whose telephone number is (571) 272-4022.

The examiner can normally be reached Monday through Friday, 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Apu Mofiz can be reached on (571) 272-4080. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Etienne LeRoux

11/21/2007



**ETIENNE LEROUX
PRIMARY EXAMINER**